



P16A-17B Computing equivalent units and assigning costs to completed units and ending work in process; no beginning inventory or cost transferred in [30–45 min]

Sue Electronics makes CD players in three processes: assembly, programming, and packaging. Direct materials are added at the beginning of the assembly process. Conversion costs are incurred evenly throughout the process. The Assembly Department had no work in process on March 31. In mid-April, Sue Electronics started production on 100,000 CD players. Of this number, 76,100 CD players were assembled during April and transferred out to the Programming Department. The April 30 work in process in the Assembly Department was 40% of the way through the assembly process. Direct materials costing \$375,720 were placed in production in Assembly during April, and direct labor of \$157,700 and manufacturing overhead of \$98,505 were assigned to that department.

Requirements

1. Draw a time line for the Assembly Department.
2. Use the time line to help you compute the number of equivalent units and the cost per equivalent unit in the Assembly Department for April.
3. Assign total costs in the Assembly Department to (a) units completed and transferred to Programming during April and (b) units still in process at April 30.
4. Prepare a T-account for Work in Process Inventory—Assembly to show its activity during April, including the April 30 balance.

P16A-18B Computing equivalent units and assigning costs to completed units and ending work in process; no beginning inventory or cost transferred in [30–45 min]

Reed Paper, Co., produces the paper used by wallpaper manufacturers. Reed's four-stage process includes mixing, cooking, rolling, and cutting. During October, the Mixing Department started and completed mixing for 4,420 rolls of paper. The department started but did not finish the mixing for an additional 650 rolls, which were 25% complete with respect to both direct materials and conversion work at the end of October. Direct materials and conversion costs are incurred evenly throughout the mixing process. The Mixing Department incurred the following costs during October:

| Work in process inventory—mixing | |
|----------------------------------|-------|
| Bal., Oct 1 | 0 |
| Direct materials | 5,675 |
| Direct labor | 570 |
| Manufacturing overhead | 6,240 |



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Transactions affecting the company's mixing process during October, including those already posted.

P16A-19B Computing equivalent units and assigning costs to completed units and ending WIP inventory; two materials, added at different points; no beginning inventory or cost transferred in [30–45 min]

Root's Exteriors produces exterior siding for homes. The Preparation Department begins with wood, which is chopped into small bits. At the end of the process, an adhesive is added. Then the wood/adhesive mixture goes on to the Compression Department, where the wood is compressed into sheets. Conversion costs are added evenly throughout the preparation process. March data for the Preparation Department are as follows (in millions):

| Sheets | | Costs | |
|---|--------------|-------------------------------------|----------|
| Beginning work in process inventory | 0 sheets | Beginning work in process inventory | \$ 0 |
| Started production | 3,300 sheets | Costs adding during March: | |
| Completed and transferred out to Compression in March | 1,900 sheets | Wood | 2,600 |
| | | Adhesives | 1,365 |
| | | Direct labor | 640 |
| Ending work in process inventory (45% of the way through the preparation process) | 1,400 sheets | Manufacturing overhead | 2,445 |
| | | Total costs | \$ 7,050 |

Requirements

1. Draw a time line for the Preparation Department.
2. Use the time line to help you compute the equivalent. (*Hint:* Each direct material added at a different point in the production process requires its own equivalent-unit computation.)
3. Compute the total costs of the units (sheets)
 - a. Completed and transferred out to the Compression Department.
 - b. In the Preparation Department's Ending work in process inventory.
4. Prepare the journal entry to record the cost of the sheets completed and transferred out to the Compression Department.
5. Post the journal entries to the Work in process inventory—Preparation T-account. What is the ending balance?

P16A-20B Computing equivalent units for a second department with beginning inventory; preparing a production cost report and recording transactions on the basis of the report's information; weighted-average method [45–60 min]

Claudia Carpet manufactures broadloom carpet in seven processes: spinning, dyeing, plying, spooling, tufting, latexing, and shearing. In the Dyeing Department, direct materials (dye) are added at the beginning of the process. Conversion costs are



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and in dollars. Should Allen Company undertake the expansion? Give your reasoning.

P18-26A (L. OBJ. 2, 3, 4) Computing breakeven sales and sales needed to earn a target operating income; graphing CVP relationships; sensitivity analysis [30–45 min]

Big Time Investor Group is opening an office in Dallas. Fixed monthly costs are office rent (\$8,200), depreciation on office furniture (\$1,500), utilities (\$2,300), special telephone lines (\$1,300), a connection with an online brokerage service (\$2,900), and the salary of a financial planner (\$11,800). Variable costs include payments to the financial planner (9% of revenue), advertising (12% of revenue), supplies and postage (4% of revenue), and usage fees for the telephone lines and computerized brokerage service (5% of revenue).

Requirements

1. Use the contribution margin ratio CVP formula to compute Big Time's breakeven revenue in dollars. If the average trade leads to \$800 in revenue for Big Time, how many trades must be made to break even?
2. Use the income statement equation approach to compute the dollar revenues needed to earn a target monthly operating income of \$11,200.
3. Graph Big Time's CVP relationships. Assume that an average trade leads to \$800 in revenue for Big Time. Show the breakeven point, the sales revenue line, the fixed cost line, the total cost line, the operating loss area, the operating income area, and the sales in units (trades) and dollars when monthly operating income of \$11,200 is earned. The graph should range from 0 to 80 units.
4. Suppose that the average revenue Big Time earns increases to \$900 per trade. Compute the new breakeven point in trades. How does this affect the breakeven point?